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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,394	09/01/2000	Susumu Yasuda	35.C14758	6267

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EXAMINER

ALLEN, DENISE S

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/654,394

Applicant(s)

YASUDA ET AL.

Examiner

Denise S Allen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 7-10, 12-15, 17-20, 22-25 and 27-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11, 16, 21 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION***Response to Amendment***

In light of the Applicant's amendment to claim 1 on September 9, 2003 (paper #11), the objection to claims 1 – 6, 11, 16, 21, and 26 in the Office Action on April 10, 2003 (paper #10) has been withdrawn.

Response to Arguments

In the Applicant's response on September 9, 2003 (paper #11), the Applicant argues with respect to claim 1, that Witschi et al fails to teach or reasonably suggest a stator and a movable element that each have a projection and a depression parallel to the displacement direction of the movable element as recited in amended claim 1 (pages 15 – 16). The Applicant further discusses the shape of the projections and depressions; specifically that the opposing faces of the projections and depressions in the disclosed invention are parallel to the direction of displacement of the movable element, and that Witschi et al teaches opposing faces that are slanted relative to the direction of displacement of the movable element. This argument has been fully considered and not found to be persuasive.

The Examiner respectfully disagrees with the Applicant's argument. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the shape of the projections and depressions, specifically the arrangement of the opposing faces) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, the Examiner asserts that the projections and

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depressions taught by Witschi et al are parallel to the direction of displacement of the movable element even if the opposing faces are not (Figure 3b).

The Applicant further argues with respect to claim 1, that Jerman et al fails to teach or reasonably suggest a stator and a movable element that each have a projection and a depression parallel to the displacement direction of the movable element as recited in amended claim 1 (page 16). This argument has been fully considered and not found to be persuasive.

The Examiner respectfully disagrees with the Applicant's argument. The Examiner respectfully points out that the projections and depressions (Figure 5 references 427 and 432) of the stator (reference 426) and movable element (references 436 and 431) taught by Jerman et al are parallel to the direction of displacement (left and right) of the movable element.

The Applicant further argues with respect to claim 1 that Jerman et al teaches an actuator utilizing an electrostatic force to operate, as opposed to utilizing an electromagnetic force to operate as recited in amended claim 1 (pages 16 – 17). This argument has been fully considered and not found to be persuasive.

The Examiner respectfully disagrees with the Applicant's argument. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Jerman et al is not relied upon by the Examiner to teach the use of an electromagnetic force to operate the actuator. In the rejection of claim 1 under 35 U.S.C. 103(a), Witschi et al is relied upon to teach the use of electromagnetic force to operate the actuator (Previous Office Action, paper #10, page 5).

Claim Objections

Claims 1 – 6, 11, 16, 21, and 26 are objected to because of the following informalities: the limitation “said stator” (claims 1 – 5, multiple occurrences) is unclear because it does not indicate which of the two stators recited in claim 1 it is referring to. Suggested correction: replace all occurrences of “said stator” with “said stators”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Witschi et al (GB 2156590 A).

Regarding claim 1, Witschi et al teaches an electromagnetic actuator (Figure 3b) comprising: a core (reference 13) with a coil (reference 19) wound around; two stators (references A and A') magnetically coupled to each end of said core; a movable element (reference 23) that can be displaced relative to said stator; and a supporting means for supporting said movable element (Figure 4 reference 45), wherein said stator and said movable element each have a projection and a depression (Figure 3b references 21 and 25) parallel to the displacement direction of the movable element and are placed in such a way that the projection and depression of said stator engage with the projection and depression of said movable element.

Regarding claim 2, Witschi et al teaches the supporting means and the stator are fixed onto a substrate (Figure 4 the rod extending upward from reference 35).

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Regarding claim 3, Witschi et al teaches the supporting means, the stator, and the movable element are made of the same material (page 4 lines 22 – 23, 31 – 32, and 46).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 21, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jerman et al (US 6329737 B1) in view of Witschi et al.

Regarding claims 1 and 4, Jerman et al teaches an electrostatic actuator comprising two stators (Figure 5 references 426 and 431); a movable element (references 436 and 431) that can be displaced relative to said stator; and a supporting means (references 437 and 438) for supporting said movable element, wherein said stator and said movable element each have a projection and a depression (references 427 and 432) parallel to the displacement direction of the movable element and are placed in such a way that the projection and depression of said stator engage with the projection and depression of said movable element; wherein said supporting means is a parallel hinge spring (references 437 and 438) made up of a plurality of flat springs combined in parallel, and the projections and depressions of said stator and the projections and depressions of said movable element are formed like comb-teeth parallel to the direction of movement of said parallel hinge spring. Jerman et al does not teach an electromagnetic actuator with a core with a coil wound around and magnetically coupled to the stators.

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Witschi et al teaches an electromagnetic actuator as described above. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the electromagnetic actuator of Witschi et al in the actuator of Jerman et al in order to move the movable element in two directions (attracting and repelling) with one stator instead of two stators.

Regarding claims 1 and 5, Jerman et al teaches an electrostatic actuator comprising two stators (Figure 3 references 226 and 232); a movable element (reference 231) that can be displaced relative to said stator; and a supporting means (reference 256) for supporting said movable element, wherein said stator and said movable element each have a projection and a depression (references 227 and 251) parallel to the displacement direction of the movable element and are placed in such a way that the projection and depression of said stator engage with the projection and depression of said movable element; wherein said supporting means is a concentric hinge spring (reference 256) combining a plurality of flat springs (references 213 and 214) in a concentric radial form, and the projections and depressions of said stator and the projections and depressions of said movable element are formed in a concentric form around the center of rotation of said concentric hinge spring. Jerman et al does not teach an electromagnetic actuator with a core with a coil wound around and magnetically coupled to the stators.

Witschi et al teaches an electromagnetic actuator as described above. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the electromagnetic actuator of Witschi et al in the actuator of Jerman et al in order to rotate the movable element in two directions (attracting and repelling) with one stator instead of two stators.

Regarding claim 21, Jerman et al teaches a movable mirror (Figure 5 reference 403).

Regarding claim 26, Jerman et al teaches a movable mirror (Figure 3 reference 202).

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Claims 6, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witschi et al in view of Jerman et al.

Witschi et al teaches an electromagnetic actuator as described above. Witschi et al does not teach an optical scanner with a movable mirror.

Jerman et al teaches an optical scanner (Figure 5) with a movable mirror (reference 403). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the mirror of Jerman et al with the electromagnetic actuator of Witschi et al in order to scan a light beam.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (703) 305-7407. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

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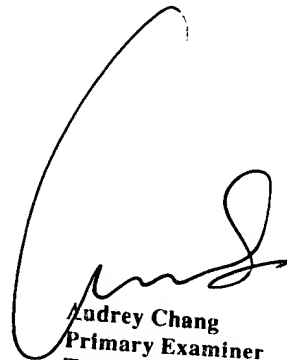
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Denise S Allen
Examiner
Art Unit 2872



dsa



Audrey Chang
Primary Examiner
Technology Center 2800